

Application No. 10/773,559
Paper Dated: March 10, 2008
In Reply to USPTO Correspondence of November 9, 2007
Attorney Docket No. 1217-040223

REMARKS

The Office Action of November 9, 2007 has been reviewed and the Examiner's comments carefully considered. The present Amendment amends independent claim 17 and adds new claims 56-58, all in accordance with the specification and drawings as originally filed. No new matter has been added. The present Amendment also cancels claims 16, 21-31, 52 and 54. Additionally, claims 1-15, 32-38 and 51 were withdrawn from further consideration in view of an earlier restriction requirement. The Applicants reserve the right to file a divisional application directed to the non-elected claims. Accordingly, claims 17-19, 40-50, 53 and 56-58 are currently pending in this application, and claim 17 is in independent form. The present Amendment also amends Tables 1-3 on pages 67-69, respectively, of the specification to change Example 3 to Comparative Example 5.

35 U.S.C. §102/§103 Rejections

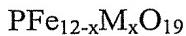
Claims 16-19, 21-31, 40-50 and 52-55 stand rejected under 35 U.S.C. §102(b) as being anticipated, by or in the alternative, under 35 U.S.C. §103(a) as obvious over United States Patent No. 6,232,026 to Lambert (hereinafter "the Lambert patent"). Claims 54 and 55 stand rejected under 35 U.S.C. §103(a) as obvious over the Lambert patent in view of newly-cited United States Patent Application Publication No. 2003/0207193 to Meyer et al. (hereinafter "the Meyer application"). In view of the above amendments and the following remarks, the Applicants respectfully request reconsideration of these rejections.

Claims 16, 21-31, 52 and 54 have been cancelled by this Amendment, thus rendering the rejection of these claims moot.

As defined by independent claim 17, the present invention is directed to a coated carrier comprising a carrier core material, and a resin coating layer with which the carrier core material is coated. The carrier core material comprises a ferrite component having composition represented by the following formula: $(MO)_y(Fe_2O_3)_z$. In the formula, y and z are each expressed in % by mol and are numbers satisfying the conditions of $40 \leq z < 100$ and $y+z=100$. M is a metal selected from Fe, Cu, Zn, Mn, Mg, Ni, Sr, Ca and Li. MO is one or more oxides selected from oxides of these metals, and contains, in the ferrite component, at least one metal oxide ($M^L O$) having a melting point of not higher than $1000^\circ C$, and at least one metal oxide ($M^H O$) having a melting point of not lower than $1800^\circ C$. The

metal oxide ($M^H O$) is selected from the group consisting of ZrO_2 , TiO_2 and Ta_2O_5 . The metal oxide ($M^L O$) is selected from metal oxides other than the metal oxide (MO). A part of the metal oxide ($M^H O$) is independently present in the carrier core material for forming the coated carrier. The carrier core material is a soft ferrite material and the metal oxide ($M^L O$) is selected from the group consisting of Bi_2O_3 and P_2O_5 .

The Lambert patent is directed to carrier particles for use in the development of electrostatic latent images. The carrier particles comprise a hard magnetic ferrite material having a single-phase hexagonal crystal structure. The hard magnetic material is doped with at least one metal that, upon substitution of the metal into the crystal structure, produces a multi-valent ion of the formula M^{n+} , wherein n is an integer of at least 4. The hard magnetic ferrite material may have a single phase hexagonal crystal structure and be represented by the formula:



wherein: P is selected from strontium, barium, or lead; M is at least one metal selected from antimony, arsenic, germanium, hafnium, molybdenum, niobium, silicon, tantalum, tellurium, tin, titanium, tungsten, vanadium, zirconium, or mixtures thereof; and x is less than about 0.6.

The Lambert patent fails to teach or suggest a coated carrier having a carrier core material that is a soft ferrite material as required by amended independent claim 17. The properties and crystal structure of a soft ferrite material are very different from those of the hard ferrite material. In addition, there is no teaching or suggestion in the Lambert patent that the carrier core material of the present invention can be obtained by altering the hard ferrite material of the Lambert patent to a soft ferrite material.

The Lambert patent also does not teach or suggest a coated carrier containing at least one metal oxide ($M^L O$) having a melting point of not higher than $1000^\circ C$ and at least one metal oxide ($M^H O$) having a melting point of not lower than $1800^\circ C$, as required by independent claim 17. Instead, the hard magnetic ferrite material prepared in the Examples of the Lambert patent include SrO and FeO which do not correspond to the metal oxide ($M^L O$) of independent claim 17, because SrO and FeO have a melting point over $1000^\circ C$ and claim 17 has been amended to require that the metal oxide ($M^L O$) be selected from the group consisting of Bi_2O_3 and P_2O_5 . Therefore, the Lambert patent does not teach or suggest the claimed feature that both at least one metal oxide ($M^L O$) and at least one metal oxide ($M^H O$),

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are used as essential components. Accordingly, the Lambert patent does not teach or suggest a coated carrier having excellent electrical properties such that it brings about no leakage of electric charge over a wide range of electric fields from a low electric field to a high electric field. Such a feature is achieved by the present invention because the carrier core material contains both a metal oxide ($M^L O$) and a metal oxide ($M^H O$) (see page 19, line 14 to page 22, line 12 of the specification of the present application).

Additionally, the Meyer application does not cure the deficiencies of the Lambert patent. The Meyer application is directed to a developer composition for non-interactive magnetic brush development, and is provided by the Examiner as allegedly teaching a coated carrier having a carrier core material that is a soft ferrite material. However, it is very difficult to alter a hard ferrite material to form a soft ferrite material. Furthermore, as discussed above, there is no teaching or suggestion in the Lambert patent that the carrier core material of the present invention can be obtained by altering the hard ferrite material of the Lambert patent to a soft ferrite material. Therefore, even if the Lambert patent is combined with the Meyer application, the coated carrier of the present invention cannot be formed.

For at least the foregoing reasons, the Applicants believe that the subject matter of independent claim 17 is not anticipated or obvious in view of the Lambert patent, or obvious in view of the combination of the Lambert patent and the Meyer application. Reconsideration of the rejection of claim 17 is respectfully requested.

Claims 18, 19, 40-50 and 53 depend from and add further limitations to independent claim 17 or a subsequent dependent claim and are believed to be patentable for at least the reasons discussed hereinabove in connection with independent claim 17. Reconsideration of the rejections of claims 18, 19, 40-50 and 53 is respectfully requested.

Claims 16-19, 21-31, 40-50 and 52-55 stand rejected under 35 U.S.C. §102(e) as being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over newly-cited United States Patent Application Publication No. 2003/0122918 to Ikeda et al. (hereinafter “the Ikeda application”). In view of the above amendments and the following remarks, the Applicants respectfully request reconsideration of these rejections.

As discussed in greater detail hereinabove the rejection of claims 16, 21-31, 52 and 54 is moot as these claims have been cancelled, and independent claim 17 defines the

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present invention as a coated carrier comprising a carrier core material, and a resin coating layer with which the carrier core material is coated.

The Ikeda application is directed to a full-color image-forming method having at least a charging step, a latent-image-forming step, a developing step of developing an electrostatic latent image by the use of a developer; a transfer step, and a fixing step. The developer includes a plurality of color developers and a black developer. The color developers are each a two-component developer for full-color image formation. The two-component developers have i) a color toner having color toner particles containing at least a binder resin, a colorant and a wax; and ii) a carrier for the color developer. The black developer is a two-component developer for full-color image formation which has i) a black toner having black toner particles containing at least a binder resin, carbon black and a wax; and ii) a carrier for the black developer. The carriers for the black developer and the color developer may have a composition represented by the following formula: $MO \cdot Fe_2O_3$ (see paragraph [0066]).

The Ikeda application fails to teach or suggest the claimed feature that both at least one metal oxide ($M^L O$) and at least one metal oxide ($M^H O$), are used as essential components. Accordingly, the Ikeda application does not teach or suggest a coated carrier having excellent electrical properties, such that it brings about no leakage of electric charge over a wide range of electric fields from a low electric field to a high electric field. Such a feature is achieved by the present invention because the carrier core material contains **both** a metal oxide ($M^L O$) and a metal oxide ($M^H O$) (see page 19, line 14 to page 22, line 12 of the specification of the present application).

Additionally, the Ikeda application does not teach or suggest the metal oxide ($M^L O$) is selected from the group consisting of Bi_2O_3 and P_2O_5 . Instead, the Ikeda application describes that V_2O_5 may be used as the non-magnetic metallic compound in the carrier cores (see paragraphs [0071] and [0072] of the Ikeda application). However, Examples 1, 2 and 4, of which the carrier core material comprised Bi_2O_3 , are superior to Comparative Example 5 (former Example 3) of which the carrier core material comprised V_2O_5 .

For at least the foregoing reasons, the Applicants believe that the subject matter of independent claim 17 is not anticipated or obvious in view of the Ikeda application. Reconsideration of the rejection of claim 17 is respectfully requested.

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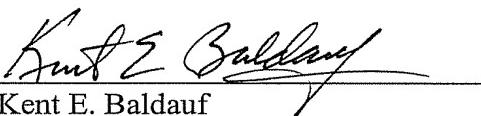
Claims 18, 19, 40-50 and 53 depend from and add further limitations to independent claim 17 or a subsequent dependent claim and are believed to be patentable for at least the reasons discussed hereinabove in connection with independent claim 17. Reconsideration of the rejections of claims 18, 19, 40-50 and 53 is respectfully requested.

New Claims

New claims 56-58 have been added by this Amendment. Each of these claims depends from independent claim 17. No new matter was added. Support for new claims 56-58 can be found in the specification and drawings as originally filed. Specifically, support for new claims 56-58 can be found in Table 1 on page 67. Claims 56-58 are also believed to be allowable over the prior art of record for the reasons set forth hereinabove in connection with independent claim 17.

Based on the foregoing amendments and remarks, reconsideration of the rejections and allowance of pending claims 17-19, 40-50, 53 and 56-58 are respectfully requested.

Respectfully submitted,
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